Written Assignment 11

Introduction To Computer Systems (Carnegie Mellon University)

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15-213: Introduction to Computer Systems Written Assignment 11

This written homework covers computer networks.

Directions

Complete the question(s) on the following pages with single paragraph answers. These questions are not meant to be particularly long! Once you are done, submit this assignment on Canvas.

Below is an example question and answer.

Q: Please describe the benefit of 2s-complement signed integers versus other approaches (such as 1s-complement or signed-magnitude).

A: For both 1s-complement and signed-magnitude representations of signed integers, we end up representing both -0 and +0, which gets inconvenient when the computer wants to test for a zero result. Additionally, in both of these representations, implementing addition/subtraction is complicated. With 2s-complement, the hardware for addition / subtraction is the same for both signed and unsigned inputs.

Grading

Each assignment will be graded in two parts:

1. Does this work indicate any effort? (e.g. it's not copied from a homework for another class or from the book)
2. Three peers will provide short, constructive feedback.

Due Date

This assignment is due on November 25th, 11:59 PM EST. Remember to convert this time to the timezone you currently reside in.

Question 1

There are many different LAN technologies (Wifi, Ethernet, etc) that can be incompatible with each other in terms of how they exchange data. How is it possible then, that *any* source host can still send information to *any* destination host when connected in an internet? Explain the two important components of this process.

Question 2

It can be a pain for a programmer to have to write unique code to satisfy every different protocol. Thankfully, functions like **`getaddrinfo`** are generic enough to be used with any protocol. How does **`getaddrinfo`** accomplish this?